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Government
Publication

National Energy Board

Reasons for Decision

**Sable Offshore Energy
Project**

and

**Maritime & Northeast
Pipeline Project**

GH-6-96

December 1997

Facilities

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ERRATUM

Please note that the English version of the National Energy Board's GH-6-96 Reasons for Decision dated December 1997 are corrected as follows:

GH-6-96 Reasons for Decision dated December 1997, Appendix I, subparagraph 18(c) (page 20) shall be replaced by the following:

- "(c) make no variation to the specifications, drawings or other information or data referred to in subparagraphs 18(a) and 18(b) without the prior approval of the Board; and"

NATIONAL ENERGY BOARD

M. L. Mantha
Secretary



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National Energy Board

Reasons for Decision

In the Matter of

The Sable Offshore Energy Project

Application dated 11 June 1996, as amended,
for Facilities and Tolls

and

The Maritime & Northeast Pipeline Project

Application dated 7 October 1996, as
amended, for Facilities & Tolls

GH-6-96

December 1997

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represented by the National Energy Board

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Recital and Appearances

IN THE MATTER OF the *National Energy Board Act* (*NEB Act*), and the Regulations made thereunder; and

IN THE MATTER OF an application dated 30 May 1996 by Mobil Oil Canada Properties and Shell Canada Limited., on behalf of the Sable Offshore Energy Project, for a Certificate under section 52 of the *NEB Act* and an Order under Part IV of the *NEB Act* to construct and operate facilities and to conduct activities that fall under the jurisdiction of the National Energy Board; and

IN THE MATTER OF an application dated 7 October 1996 by Maritimes & Northeast Pipeline Management Ltd., on behalf of Maritimes & Northeast Pipeline Limited Partnership, for a Certificate under section 52 of the *NEB Act* and an Order under Part IV of the *NEB Act* to construct and operate facilities and to conduct activities that fall under the jurisdiction of the National Energy Board; and

IN THE MATTER OF Hearing Order GH-6-96;

HEARD in Moncton, New Brunswick, April 4, 1997, in Antigonish, Nova Scotia, April 5, 1997, in Halifax, Nova Scotia on 7 to 11, 14 to 18, 21 to 24 April 1997, in Fredericton, New Brunswick on 28 to 30 April 1997, 1 and 2, 5 to 9, 12 to 16 May 1997, and in Halifax, Nova Scotia on 26 to 30 May 1997, 2 to 6, 9 to 13, and 23 June 1997, 2 to 4, 7 to 11 and 14 July 1997.

BEFORE:

K.W. Vollman	Presiding Member
R.O. Fournier	Member
A. Côté-Verhaaf	Member

APPEARANCES:

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C. Murphy	Cape Breton Island Building and Construction Trades
G. Dumoulin	Council
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C. Chisholm	International Brotherhood of Boilermakers
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P.F. Christie	Maritime Pipeline Landowners Association
J. Reynolds D.R. Cleveland P. Doig	Metropolitan Halifax Chamber of Commerce
F.V. Hall D. Wimberly	Millwood Environmental Action Team
R.J. Hunka T. Martin	Native Council of Nova Scotia
C. Purcell	Nova Scotia Salmon Association
R. Starr	Nova Scotia New Democratic Party
G. Archibald	Progressive Conservative Caucus of Nova Scotia
D. Ablonczy	Reform Party of Canada
G. Dalzell D. Thompson J. Dingwell	Saint John Citizens for Clean Air

J. Abouchar R. Perley P. Barlow	Union of New Brunswick Indians
B. Chisholm	United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada - Local 244
E. Pace B. MacDonald	United Association of Plumbers and Pipefitters - Local 56
C. Recchia C. Stewart R. Clowater I. Milewski	World Wildlife Fund
D. Wimberly H. Lofgren	Allergy and Environmental Health Association, Nova Scotia, on behalf of Allergy and Environmental Health Association, New Brunswick; Allergy and Environmental Health Association, Canada; Real Alternatives To Toxics In The Environment; and Nova Scotia Coalition On Environmental Hypersensitivity
K. Burrill	Accent Engineering Consultants Inc.
R.J. Harrison	Central Maine Power Company
N. Miller	Corridor Resources Inc.
H. Hancock	Country Harbour Sea Farms Co-Operative Limited
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F.V.W. Penick	Kimberly-Clark Nova Scotia, a Division of Kimberly-Clark Incorporated, et al (Large Industrial Group)
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L.L. Manning	Mosbacher Operating Ltd.
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C.K. Yates P.W. Gurnham R.S. Niedermayer	Nova Scotia Power Incorporated

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C.B. Woods	PanEnergy Marketing Limited Partnership
A.S. Hollingworth	Portland Natural Gas Transmission System
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T. Thompson	
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M. Ledwell V. Bulger L. Walsh	Province of Prince Edward Island
C. MacKinnon	City of Saint John
P. Doig	Strait-Highlands Regional Development Agency, Town of Port Hawkesbury, and Strait Area Chamber of Commerce
F. Leblanc, M.P.	On his own behalf
E. Lockerby	On his own behalf
G. Randall	On his own behalf
P. Noonan C. Beauchemin	Board Counsel

Foreword

The Proponents of the Sable Offshore Energy Project (SOEP) and of the Maritimes and Northeast Pipeline Project (M&NPP) submitted applications to the following regulatory agencies: the Canada-Nova Scotia Offshore Petroleum Board (CNSOPB); the National Energy Board (NEB or the Board); and the Nova Scotia Energy and Mineral Resource Conservation Board (NSEMRCB).

Given that each jurisdiction required a public review of both projects, an opportunity emerged to conduct a joint public review as a means of streamlining the regulatory process. The outcome was the Agreement for a Joint Public Review of the Proposed Sable Gas Projects (the Agreement) forged among the Ministers of Environment for Canada and Nova Scotia, the Ministers of Natural Resources for Canada and Nova Scotia, the Chairman of the National Energy Board and the Acting Chief Executive Officer of the Canada-Nova Scotia Offshore Petroleum Board (the Signatories). The purpose of the Agreement was to co-ordinate the environmental and socio-economic assessment requirements of the Signatories by providing a review of the environmental and socio-economic effects likely to result from the Projects.

A Joint Public Review Panel was struck by the Signatories comprising five members. The Chairman was appointed as a temporary member of the NEB, and two of the remaining members were full-time NEB Members.

The Terms of Reference contained in the Agreement stipulated that the review procedures set by the Joint Review Panel would include the *NEB Rules of Practice and Procedure* which contemplate testimony under oath or solemn affirmation, cross-examination and argument. The applications received from SOEP and M&NPP were simultaneously considered by the NEB during the Joint Public Review proceeding. The three NEB Members on the five member Joint Review Panel acted as the NEB panel for both the SOEP and the M&NPP facilities under Hearing Order GH-6-96.

The Joint Review Panel released its report on the environmental and socio-economic effects of the Projects on 27 October 1997. The Summary and Conclusions section from that report is included in this document as Chapter 2.

The Board has considered the Joint Public Review Panel Report Recommendations and the Government of Canada's response thereto, and is of the view that, taking into account the implementation of appropriate mitigation measures identified in the course of the Joint Panel Review proceedings, the Projects are not likely to cause significant adverse environmental effects. The Board accepts all the pertinent recommendations of the Joint Public Review Panel and, where appropriate, the recommendations have been incorporated as certificate conditions. The following chapters constitute the Board's decisions on those matters under its jurisdiction and the reader should refer to the Joint Review Panel Report for the reasons therefore.

Chapter 1

Introduction

The Sable Offshore Energy Project (SOEP), a consortium consisting of Mobil Oil Canada Properties Limited, Shell Canada Limited, Imperial Oil Resources Limited, and Nova Scotia Resources Limited, plans to develop six fields located on the Scotian Shelf: Venture; South Venture; Thebaud; North Triumph; Glenelg; and Alma. SOEP proposes the construction of offshore and onshore facilities for the drilling, production, transmission and processing of natural gas. Gas and associated natural gas liquids will be collected from offshore production platforms and brought ashore by means of a submarine pipeline to a gas plant to be located at Goldboro, in Guysborough County, Nova Scotia. Natural gas liquids will be transported from the gas plant by an onshore pipeline to Point Tupper, Nova Scotia for further handling and shipping.

Gas production is projected for late 1999, starting at Thebaud, Venture and North Triumph. Additional fields will be developed as required to maintain the sales gas rate of 13.0 million cubic metres per day (460 million cubic feet per day). Development of the South Venture, Glenelg and Alma fields is currently planned for 2004-2007. Project facilities will be designed so that, with proper inspection, maintenance and repairs, they can be used well beyond the current proposed project life of 25 years. This design approach will enable later development of additional satellite fields. Further exploratory discoveries will be incorporated into SOEP as warranted. Accordingly, SOEP is viewed as a seed project which should promote future development of offshore gas reserves on the Scotian Shelf.

The Maritimes and Northeast Pipeline Project (M&NPP) proposal will transport the processed natural gas via an onshore pipeline to Canadian and U.S. markets. The facilities will consist of 558 kilometres of 762 millimetre pipeline extending from the outlet point of the Goldboro gas plant, first in a northwesterly direction passing near New Glasgow and Tatamagouche, Nova Scotia, crossing the Nova Scotia-New Brunswick border near Tidnish. Approximately 234 kilometres of pipeline will be located in Nova Scotia. The pipeline will traverse New Brunswick in a westerly direction passing near Moncton and Chipman. From Chipman it will proceed in a southwesterly direction passing near Fredericton, crossing the Saint John River and proceeding to the international border near St. Stephen, New Brunswick. Approximately 324 kilometres of pipeline will be located in New Brunswick. At the border, the pipeline will connect with U.S. facilities that will deliver the gas to the northeastern states and ultimately tie into the existing North American natural gas pipeline grid.

The NEB formally referred the SOEP proposal to the federal Minister of the Environment in June 1996 for environmental assessment by a panel and the M&NPP proposal was added in October 1996.

The Agreement for a Joint Public Review of the Proposed Sable Gas Projects set out the process for conducting the Joint Public Review. It provided that the public review would allow for the collection and examination of environmental evidence and the hearing of argument on the environmental effects of the Projects for use in subsequent deliberations and decision making on the applications by regulatory authorities. It also provided a forum for one of the members acting as Commissioner to the CNSOPB to publicly distribute the Development Application as well as permit the collection of information in relation to the Development Plan Application for use in subsequent deliberations and recommendations to the CNSOPB.

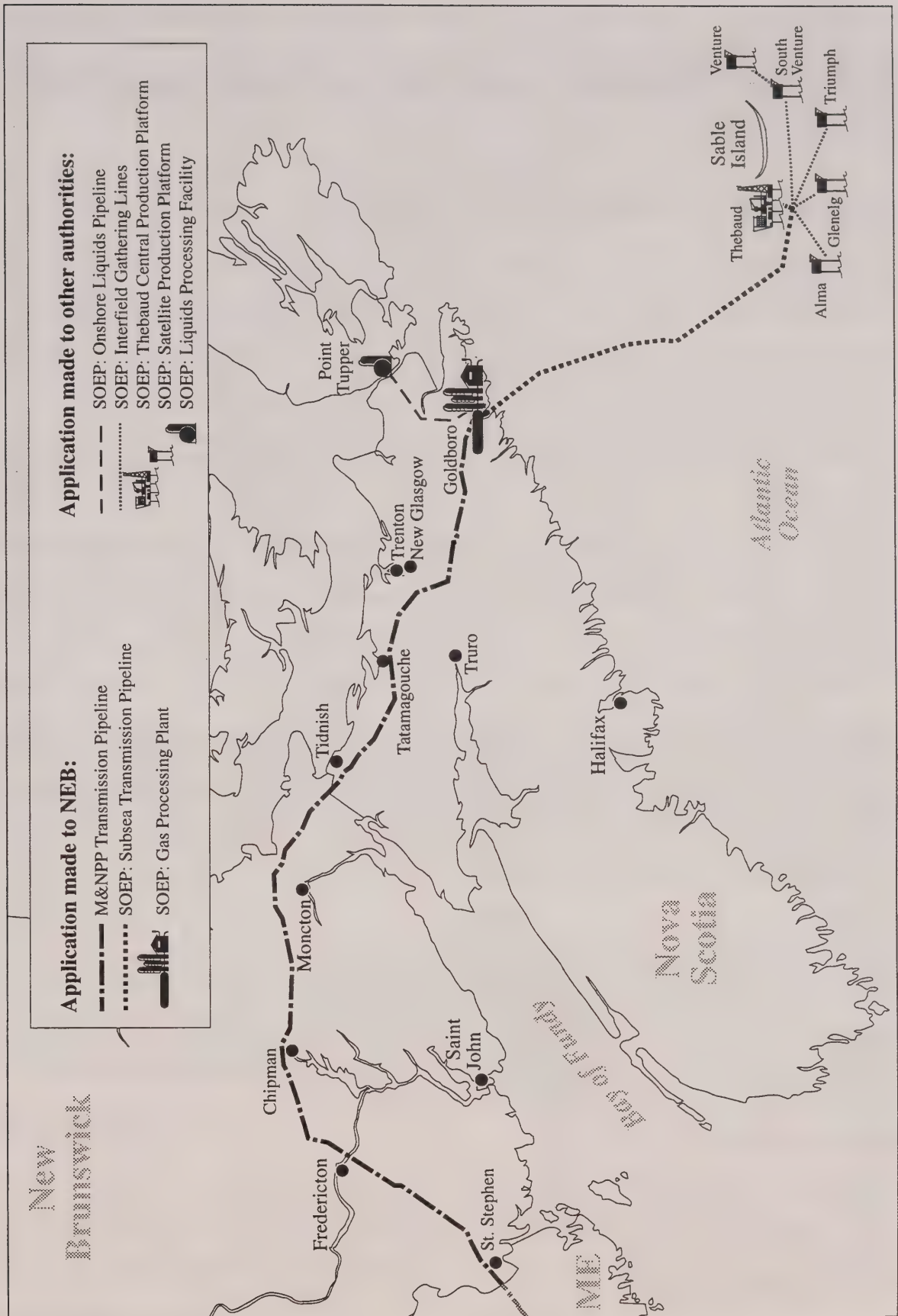
As previously mentioned in the foreword, the Terms of Reference, contained in the Agreement, stipulated that the Review procedures set by the Joint Review Panel would include the *NEB Rules of Practice and Procedure* which contemplate sworn testimony, cross-examination and argument. Many of the issues relating to SOEP and to M&NPP were the same or interdependent, as were many of the specific issues to be considered by the Joint Public Review Panel, the NEB panel and the Commissioner. The Joint Review Panel, the NEB panel and the Commissioner therefore decided to hear evidence and argument, relevant to their respective mandates, with respect to both SOEP and M&NPP in a single consolidated proceeding. The "Directions on Procedure", to that effect, were issued by the Joint Review Panel on 16 December 1996 as was the NEB Hearing Order, GH-6-96.

Applications by SOEP and M&NPP to the NEB were for Certificates of Public Convenience and Necessity under section 52 of the *NEB Act* for the facilities under NEB jurisdiction, which include: the offshore pipeline from the central processing facility at Thebaud to landfall; the onshore line from landfall to the gas plant at Goldboro, Nova Scotia; the slugcatcher and gas processing facilities at Goldboro; and, the 558 kilometres of 762 millimetre pipeline and associated facilities extending from the outlet point of the Goldboro gas plant to the international border near St. Stephen, New Brunswick. As well, application was made for an Order under Part IV of the *NEB Act* respecting pipeline tolls and tariffs.

The responsibility for the approval of the detailed design and matters related to the detailed design for the central processing facility at Thebaud, the unmanned satellite platforms at the remaining five gas fields, the interfield flowlines and the drilling activity required for the gas field development rests with the CNSOPB. Discussion and review of these matters will be part of their subsequent Decision Report on the Development Plan Application.

The responsibility for the approval of the detailed design and matters related to the detailed design for the natural gas liquids pipeline and the natural gas liquids facilities at Point Tupper, Nova Scotia rests with the province. Discussion and review of these matters will be part of their subsequent regulatory permitting and reporting.

Figure 1-1
The SOEP and M&NPP Projects



Chapter 2

The Joint Review Panel Report Summary and Conclusions

(This chapter is taken directly from the Joint Review Panel Report)

The Joint Review Panel (the Panel) after taking account of the evidence, cross-examination, argument and public comments during its examination of the Sable Offshore Energy Project (SOEP) and the Maritimes and Northeast Pipeline Project (M&NPP), concludes that SOEP and M&NPP are not likely to cause significant adverse environmental effects, provided that appropriate mitigation identified in the course of the review proceedings is applied to both Projects and that the Panel's recommendations are followed and implemented. As well, the Panel concludes that the socio-economic outcomes are favourable for the Maritimes and Canada. As a consequence, the Panel encourages the appropriate regulatory authorities to proceed with all necessary approvals for SOEP and M&NPP without further delay.

In reaching its conclusions, the Panel had for its review information gathered from twenty information and scoping sessions held throughout Nova Scotia and New Brunswick, 1270 exhibits representing either direct written evidence or responses to formal information requests, and a total of 12,266 pages of transcripts from the 56 hearing days in Halifax and Fredericton.

Alternatives

Prior to the start of the hearings, a motion was put forward by Trans Québec and Maritimes Pipeline Inc. (TQM) to request that the Panel consider their proposal as an alternative to M&NPP and allow for a full environmental assessment of the TQM Pipeline Project, and that the National Energy Board (NEB) panel delay any decision on M&NPP until TQM's proposal has been heard. In addition, the Panel heard arguments from Tatham Offshore Inc. and Seafloor Structures Consulting Ltd. requesting that their proposals be considered as alternatives.

The Panel considered whether procedural fairness required it to delay issuance of its Report in order to conduct a comparative environmental assessment of the alternatives to the Projects under review. The Panel believes that it has satisfied its obligations in this regard through the 56 day hearing convened to examine the SOEP and M&NPP Applications, which includes evidence submitted with respect to alternatives to the Project. In view of this, the Panel concludes that it would be inappropriate to delay its report in order to embark upon multiple environmental assessments of potential alternatives. In addition, the NEB panel has also decided to reject requests for delay.

Offshore Environment

In reaching its conclusion with regard to significant adverse effects, the Panel considered many issues, both environmental and socio-economic. A major concern was the Proponents' introduction of waste discharges into the marine environment, particularly drill cuttings with their attendant residues of oil base drilling muds.

Based on the evidence presented, the Panel believes that SOEP's proposed methodology for the treatment and discharge of drilling and production wastes will not result in significant adverse effects to the Scotian Shelf. The Panel notes that SOEP has stated that it will meet or fall well below the limits outlined in the "Offshore Waste Treatment Guidelines" for hydrocarbon content in liquid wastes and on drill solids. The Panel recognizes the importance of monitoring platform discharges.

Accordingly, it has provided recommendations to ensure that SOEP implement adequate monitoring and to encourage the incorporation of new drilling waste management technologies when they become available, if they are proven to be environmentally sound and economically feasible.

Another major concern was the possible impacts of the Project on the Gully, an area of special ecological significance on the Scotian Shelf. Concerns were raised regarding the impact of platform discharges and noise generated by Project-related activities potentially reaching the Gully. An additional concern that emerged was that future project expansion might lead to developments even closer to the Gully.

The Panel is concerned over the possibility of project expansion encroaching on the Gully. It has concluded that additional research must be conducted to obtain baseline data on water circulation, sediment transport and acoustic transmission effects on marine mammals. Accordingly, the Panel recommends that, prior to regulatory approval, SOEP submit its Code of Practice outlining protection measures for the Gully as part of their final Environmental Protection Plan. Included in the Code will be details on proposed monitoring programs and mitigative measures. The Panel further recommends that SOEP initiate or contribute to research activities that will provide the baseline data necessary for Environmental Effects Monitoring programs. Additional data are essential to permit effective decision-making with regard to further development of the resource, particularly at sites nearer to the Gully.

The impact of onshore and offshore construction activities on the aquaculture industry raised a number of issues, particularly in the area of Country Harbour, Nova Scotia. Blasting and trenching near the pipeline landfall raised concerns as to the potential for re-suspension of sediments. The siting of supply or service bases near Country Harbour was also raised. Increased vessel traffic associated with these bases could seriously impact on current aquaculture leases in the area. Of particular importance to the industry was the possibility of actual or perceived tainting, given that consumers view Country Harbour as a pristine marine environment.

The Panel was concerned here as well about the lack of baseline data regarding possible adverse effects on the aquaculture industry. Accordingly, it recommends that SOEP commit to a minimum of one full year of baseline water and sediment monitoring. As to the potential impact of supply or service bases on the aquaculture industry near Country Harbour, the Panel recommends that SOEP remove Country Harbour from consideration as a base site.

Onshore Environment

Onshore issues of particular importance to both the SOEP and M&NPP proposals included watercourse crossings, of which 260 are anticipated, and the potential impact of acid generating rock. Issues arising from watercrossing activities were focussed on potential adverse effects on fish and fish habitat. Blasting and excavation can expose acid generating rock, which can increase acid levels in the aquatic environment, thereby adversely affecting some organisms. Special emphasis was directed at the adverse impacts on salmon.

The Panel recommends that SOEP and M&NPP mitigate potential Project impacts by addressing: watercourse crossing methods; wet weather shut-down policy; construction techniques and mitigative measures; methods to deal with mitigation of acid generating rock; and finally, new environmental issues resulting from construction activities.

Route selection and land use conflicts were additional areas of concern. The Panel believes that the M&NPP route selection process was thorough and involved considerable public participation. The proposed general route for M&NPP is adequate, if proper mitigative measures are followed. Moreover a detailed 25 metre route will be identified and studied further. This should afford further opportunities for avoidance or mitigation of any sensitive environmental areas and address any new or remaining concerns which were raised by aboriginal and environmental interests. It will also permit persons who believe that their lands may be adversely affected to make their views known and ensure that their rights are protected.

The Panel recognizes that many rural residents fear that the presence of a pipeline will detract from the rural quality of life. It heard concerns during scoping and information sessions on matters such as pipeline safety, adverse effects on wildlife, property trespass and the aesthetics of right-of-ways. The Panel recognizes their validity but feels that the evidence before it indicates that these kinds of impacts can be avoided or mitigated to insignificance through proper planning, construction and maintenance practices. SOEP and M&NPP have committed to ensure that there will be no significant adverse impacts and the Panel has provided recommendations to ensure this happens.

Socio-Economic

Issues brought forth in the Hearing were not limited to environmental matters alone; they included many areas related to socio-economic effects and benefits. One issue of some importance was the adequacy of the public consultation program, which is required by the NEB and by the environmental assessment legislation of Nova Scotia and Canada. The Panel found SOEP and M&NPP's programs to be extensive, and it was satisfied with their overall effectiveness. One exception was the inadequate initial contact with the aboriginal community.

Jobs and business opportunities were a concern. The Panel found that direct construction benefits will be short-term and limited, especially when compared to overall economic activity in the Maritimes. The benefits will be real and welcome but they will not be an economic panacea.

The main economic benefits lie in the future. Attaining these benefits will depend on SOEP and M&NPP acting as a catalyst to further hydrocarbon exploration and development. Attainment of that goal will provide an energy alternative for existing industry as well as providing a stimulus for new industrial development, especially in the area of petrochemicals.

The Panel believes that more could be done to enhance opportunities in the Maritimes. In particular, there is no commitment to process gas liquids in Nova Scotia. They appear to be destined solely for export markets. The Panel sees industrial development opportunities arising from the availability of natural gas and its liquid by-products. The Panel was also struck by a lack of foresight in developing training programs in anticipation of the increased economic activity that a 'seed' project will generate. A similar concern was the absence of a long range research and development program. Such a program will be needed to provide a requisite environmental and socio-economic information base for

future regulatory decisions and to ensure that the Canada and Nova Scotia capture as many future benefits as possible.

Markets and Tolls

From the perspective of the Panel, a primary objective of SOEP and M&NPP is to provide access to natural gas for the Maritimes markets. At the same time, the Panel recognizes that markets in the U.S. northeast are a prerequisite to the success of the Projects.

Further, the Panel is of the view that the appropriate toll design is linked to several market development factors. First, SOEP and M&NPP are seed projects, which will provide the foundation for future activity. Second, the building of laterals will encourage access to and growth of natural gas markets in the Maritimes. Third, while preserving the overall economic viability of the pipeline, it is important to recognize the relative economic position of different groups of shippers.

Because of the importance the Panel places on use of Sable gas in the Maritimes, it is inclined to look at the toll design and laterals policy as a "package". The Panel was attracted to M&NPP's postage stamp toll design methodology and Lateral Policy on the basis that it would provide a solid economic foundation for the pipeline in its early years and the greatest potential for the development of the Maritimes market through M&NPP's Lateral Policy.

While the Panel recognizes that the Province of Nova Scotia withdrew their support for the "Joint Position" in reply argument, it is of the view that the Joint Position provides the best available package for promoting gas market development in the Maritimes and, through discounts, partially recognizes the Nova Scotia position that distance should be a factor in toll design.

Nova Scotia intervenors were also opposed to the commitment by SOEP to sell the entire gas production from the first six Sable fields exclusively to M&NPP shippers. They argued that because of their proximity to the Goldboro gas plant, they should not be required to become shippers on the M&NPP pipeline in order to have access to Sable gas. While recognizing that sufficient gas production must be available to M&NPP to make the pipeline economic, the Panel will not sanction tied sales by SOEP because it believes that access to natural gas for Canadians should not be conditional on buyers/shippers transporting their gas on designated facilities.

The Panel believes that the option of by-passing the M&NPP pipeline addresses Nova Scotia interests in arranging their own transportation, while preserving the prerequisite capacity to serve the U.S. northeast.

Monitoring

Natural gas production and transportation will bring new challenges to the Maritimes, but they are not dissimilar to those faced in the past 25 years of offshore petroleum exploration and production. Projects require detailed planning for the proposed operations prior to construction, and thereafter, effective inspection, monitoring and enforcement programs. Planning for SOEP and M&NPP is still evolving. The Panel in making its recommendations is aware that in some instances it has assessed principles rather than details. This is the nature of the offshore development process. Inspection, monitoring and enforcement are tools that guarantee that a project will be built and operated according to plan. The Panel has recommended a number of safeguards to ensure that any modifications to plans

result in greater safety, less environmental impact and more benefits. The Panel has, to the best of its ability, ensured that effective inspection and enforcement mechanisms are in place, consistent with the precautionary principle which ensures a conservative approach to environmental protection. It has also supported mechanisms by SOEP and M&NPP to encourage monitoring through continuing dialogue and input from the public, stakeholders, regulators and special interest groups. SOEP and M&NPP have initiated a range of consultative committees and the Panel has suggested how these committee mechanisms can be improved. Committees offer a meaningful opportunity to monitor work in progress and ensure that local and special concerns are addressed. The Panel recognizes the efforts that SOEP and M&NPP have taken to date and encourages them to build on these for the future.

Chapter 3

The Sable Offshore Energy Project

3.1 Description

The proposed two-phase production gathering pipeline from the Thebaud platform to the Goldboro gas plant will be approximately 208 kilometres in length. The pipe will be 660 millimetres in diameter, with a wall thickness of 17.48 millimetres, and has been designed with excess capacity in order to provide for future expansion of the offshore production facilities. The design pressure for the pipeline will be approximately 15,300 kPa, in accordance with the "CSA Z662-96, Oil and Gas Pipeline Systems, December 1996" specifications, and the maximum operating pressure will be approximately 11,700 kPa. The pipeline will be externally coated with a fusion bond enamel and cathodically protected against corrosion. The Proponents also considered coating the pipe with concrete to provide increased weight stability, but a final decision on this option has yet to be made.

The subsea pipeline corridor was selected on the basis of distance, slope, water depth and the avoidance of unsuitable substrate materials. The line will be routed, where possible, to avoid extreme water depths in order to simplify lay barge requirements and to avoid rock outcrops and severe slopes. The Proponents expect that the pipeline will be trenched in shallow water and, in many cases, that it will self bury. Design criteria for burial will be refined in forthcoming geotechnical studies.

The proposed onshore facilities will include a slugcatcher and a natural gas processing plant to be located in Goldboro, as well as a natural gas liquids processing facility to be located in the Point Tupper area. The gas plant will produce specification sales gas and unstabilized liquid products. These liquids will be shipped by pipeline to Point Tupper where production of specification liquefied petroleum gases and stabilized condensate will occur.

The Goldboro gas plant will have the capacity to process approximately 17.0 million cubic metres per day of raw inlet natural gas and to remove 3,849 cubic metres per day of natural gas liquids. The actual volumes of product shipped will vary according to production practices.

3.2 Environment and Socio-Economic Matters

Decision

The Board has considered the Joint Public Review Panel Report and the Government of Canada's response thereto, and is of the view that, taking into account the implementation of appropriate mitigation measures identified in the course of the Joint Panel Review proceedings, the portions of the Sable Offshore Energy Project under its jurisdiction are not likely to cause significant adverse environmental effects. Further, the socio-economic outcomes will be favourable to the Maritimes and Canada.

3.3 Facilities

Decision

Based on the information filed during these proceedings, the Board is satisfied with the design and configuration of the SOEP facilities. SOEP will be required to submit, for Board approval, information relevant to the final design of the offshore pipeline well in advance of actual construction. Further, SOEP will be required to seek approval pursuant to section 47 of the *NEB Act* for leave to open the offshore pipeline, the gas plant and associated facilities.

3.4 Economic Matters

Supply

A total of 121 test wells have been drilled on the Scotian Shelf since 1959. The CNSOPB has issued 22 Significant Discovery Licenses for fields considered to have potential commercial viability. These sites are estimated to contain a total of 163 billion cubic metres of recoverable gas.

The SOEP proponents submitted an application based on the proposed development of six fields on the Scotian Shelf: Alma, Glenelg, North Triumph, Venture, South Venture and Thebaud. These six fields have mean expected raw recoverable gas of 84.3 billion cubic metres and a 10 percent probability that the reserves will exceed 145.1 billion cubic metres. The proponents identified this six-field development as a "seed project" for future development. Additional information on supply can be found at pages 16 and 62-63 of the Joint Review Panel Report.

Markets

The ultimate markets for the SOEP-supplied gas are located in eastern Canada and the U.S. northeast where the gas would displace higher-priced fuels as well as serve incremental markets. A full discussion of both domestic and export markets can be found in Chapter 4 and on pages 64 and 65 of the Joint Review Panel Report.

Tolls & Method of Regulation

At the outset and for an indeterminate period, SOEP will be the sole user of the offshore transportation and onshore gas processing facilities. Since it will assume full ownership and operating costs of the facilities, SOEP will not charge a "toll" for transportation or processing service.

SOEP submitted that, because it would be the sole shipper on its line and no toll would be charged, there would be no need for the NEB to regulate its activities. Alternatively, it suggested that it be regulated as a Group 2 company on a complaints basis. Further, SOEP requested relief from the following accounting and financial reporting requirements: to keep its book of accounts pursuant to the code of accounts prescribed in the *Uniform Accounting Regulations*; to file audited financial statements; to file a tariff; to file detailed information to support a tariff specified in Part X of the NEB's "Guidelines for Filing Requirements"; and to comply with the *Toll Information Regulations*.

Financing

The companies participating in SOEP have substantial assets in Canada and around the world and will generate the funds necessary for the project internally or from third parties.

Decision

After taking into account the evidence filed with respect to supply, markets, economic feasibility and financial matters, the Board concludes that the SOEP facilities can be financed and will be used and useful over their economic life.

The SOEP operating entity will be designated as a Group 2 company for the purposes of regulation under the *NEB Act*. SOEP will be required to keep its book of accounts pursuant to the code of accounts prescribed in the *Uniform Accounting Regulations* and to file audited annual financial statements. Should a third party request service on SOEP's facilities, SOEP would be required to file a tariff and toll schedules pursuant to subsection 60(1) of the *NEB Act*. Further, this tariff would include the explanatory note set out in Schedule B of the "Memorandum of Guidance on the Regulation of Group 2 Companies" indicating that persons who cannot resolve traffic, toll, and tariff issues with the Company may file a complaint with the Board.

Chapter 4

Maritimes & Northeast Pipeline Project

4.1 Description

The proposed Maritimes & Northeast Pipeline Project (M&NPP) will consist of 558 kilometres of pipeline, 762 millimetres in diameter, extending from the outlet point of the Goldboro gas plant, first in a northwesterly direction passing near New Glasgow and Tatamagouche, and crossing the Nova Scotia-New Brunswick border near Tidnish.

The pipeline will traverse New Brunswick in a westerly direction passing near Moncton and Chipman. From Chipman, it will proceed in a southwesterly direction passing near Fredericton, crossing the Saint John River and proceeding to the international border near St. Stephen, New Brunswick. Approximately 234 kilometres of pipeline will be located in Nova Scotia and approximately 324 kilometres of pipeline will be located in New Brunswick.

The pipeline will be designed, installed and operated in accordance with the Board's *Onshore Pipeline Regulations*, which specify that the design, installation, testing and operation of a pipeline be in accordance with the applicable provisions of the "Canadian Standards Association Z662, Oil and Gas Pipeline Systems".

The proposed facilities include a custody transfer meter station located at the pipe inlet, three pig launchers and two pig receiver traps. Also included in the design are mainline valves, located at a nominal 40 kilometre spacing, and side valves for the future connection of laterals.

The pipeline will be designed to accommodate an initial forecast of 530,000 MMBtu (million British thermal units) of peak day capacity and, with additional compression, the peak day capacity could be increased to over of 800,000 MMBtu.

4.2 Environment and Socio-Economic Matters

Decision

The Board has considered the Joint Review Panel Report and the Government of Canada's response thereto, and is of the view that, taking into account the implementation of appropriate mitigation measures identified in the course of the Joint Panel Review proceedings, M&NPP is not likely to cause significant adverse environmental effects. Further, the socio-economic outcomes will be favourable to the Maritimes and Canada.

4.3 Facilities

Decision

Based on the information filed during these proceedings, the Board is satisfied with the design and configuration of the M&NPP facilities. Before initiating service, the company operating the pipeline will be required to seek approval pursuant to section 47 of the *NEB Act* for leave to open the pipeline.

4.4 Economic Matters

Supply

The supply for M&NPP will come from SOEP, as discussed in Chapter 3. More information on the supply available to M&NPP can be found at pages 16 and 62-63 of the Joint Review Panel Report.

Markets

Sable-sourced gas is expected to serve incremental and displacement industrial, Local Distribution Company (LDC), marketer, and power generation markets in Canada and in the U.S. The northeast U.S. market is considered to be the anchor market for SOEP and M&NPP.

Based on the NEB's "1994 Energy Supply and Demand Report", total energy demand in Nova Scotia and New Brunswick is forecast to grow at an average annual rate of approximately one percent between the years 1991 and 2010. M&NPP submitted that the construction of the SOEP and M&NPP facilities and downstream distribution systems will provide the necessary catalyst for the development and growth of these domestic markets.

To demonstrate the long-term nature of gas demand in the U.S. northeast market, M&NPP relied on a forecast, prepared by the Reed Consulting Group, entitled "Assessment of the Market for Natural Gas in the Northeast United States". This study concluded that total gas demand (i.e. firm throughput, interruptible, and electric power) in the U.S. northeast is forecast to increase from 2,700 TBtu (trillion British Thermal units) in 1997 to 3,325 TBtu in 2006, an annual average increase of 2.3 percent. Most of this gas demand is directly accessible off the U.S. portion of the M&NPP system.

M&NPP entered into Precedent Agreements with domestic and export shippers totalling 640,000 MMBtu/d. In addition executed Precedent Agreements for 7,600 MMBtu/d and 100,000 MMBtu/d of OP 275 and OP 214 (offpeak) services, respectively, have also been executed.

M&NPP has executed 20-year Backstop Precedent Agreements with Mobil Natural Gas Inc. and Imperial Oil Resources Limited for all of the throughput on the M&NPP pipeline up to 440,000 MMBtu/d that is not subject to firm transportation Service Agreements entered into by other shippers. These Backstop Precedent Agreements take effect from the date of commencement of service, and include all capacity that might become available in the future as a result of the termination of such PAs or firm transportation Service Agreements prior to the end of the 20 years.

Financial Regulation

Toll Design and Lateral Policy

The M&NPP proponents applied for a joint toll design and Lateral Policy which it argued were inseparable. The toll design is a single postage-stamp rate for each of the services offered. The Lateral Policy would see laterals tolled on a rolled-in basis if they generated sufficient revenue to cover the annual cost of service. Should additional costs be added because of a lateral, the pipeline company would seek a contribution from the shipper.

During the hearing, a Joint Position on Tolling and Laterals (Joint Position) was negotiated between representatives of SOEP and M&NPP and the provinces of Nova Scotia and New Brunswick. The Joint Position supports the postage stamp toll design but offers discounts for deliveries in Nova Scotia and New Brunswick in the initial years of the project. Any revenue deficiency associated with these discounts would be offset through adjustments to the depreciation policy of the pipeline. The Joint Position supported M&NPP's Lateral Policy and committed M&NPP's proponents to build laterals to Halifax, Nova Scotia, and Saint John, New Brunswick. Further, the Joint Position committed the SOEP proponents to put aside 10,000 MMBtu/d of production for sale to LDCs in each province for the initial three years of production.

Method of Regulation

The M&NPP proponents indicated a preference for regulation on a complaint basis as provided by Group 2 status. However, the M&NPP proponents suggested that it might be more appropriate to reserve judgement on the designation of the pipeline for Group 1 or Group 2 status until a hearing on its final toll application is held.

Financing

The M&NPP partners intend to finance the project with a combination of funded long-term debt and equity injections from the partners. The long-term debt will be arranged based on support provided by the long-term transportation contracts and financial arrangements with producing companies.

Decisions

After taking into account the information provided during this proceeding concerning supply, markets, economic feasibility and financial matters, the Board concludes that the M&NPP facilities can be financed, will be used and useful over their economic life, and that the associated tolls will be paid.

The Board approves the forward test year cost of service methodology as appropriate for M&NPP. Maritimes and Northeast Pipeline Management Ltd. (M&NPML) is directed to file tolls which are designed using this methodology and incorporate the provisions respecting toll design and laterals as contained in the "Joint Position on Tolling and Laterals" filed as Appendix V of the Joint Review Panel Report. M&NPML will be regulated as a Group 1 company.

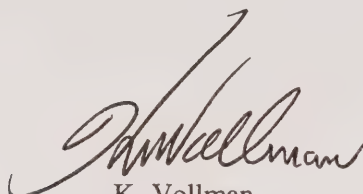
Concerning the cost of equity capital, the Board agrees with the Joint Review Panel's statement, "...M&NPP can be viewed as having the same business risk as other Group 1 pipelines." However, the circumstances faced by M&NPP are substantially different from those faced by other pipelines regulated by the Board. It is a greenfield project, its only sources of gas are new and untested fields, it will be serving an untested market in Canada, and it is facing significant competition for its anchor market in the U.S. northeast. Consequently, the Board approves the combination of a 25 percent common equity portion coupled with a 13 percent rate of return on that equity as appropriate in the circumstances of this pipeline.

The Board notes that, should the circumstances change before the five years are up, any interested party may come before the Board to request a change in the financial structure and rate of return on equity for M&NPP.

Chapter 5

Disposition

The foregoing chapters constitute our Reasons for Decision in respect of the applications heard by the Board in the GH-6-96 proceedings. The Board has found that the Sable Offshore Energy Project facilities under its jurisdiction and the Maritimes & Northeast Pipeline Project will be required for the present and future public convenience and necessity, provided the conditions outlined in Appendices I and II are met. Therefore, the Board will seek approval from the Governor in Council for the issuance of certificates.



K. Vollman
Presiding Member



R. Fournier
Member



A. Côté-Verhaaf
Member

Calgary, Alberta
December 1997

Appendix I

Sable Offshore Energy Project Certificate Conditions

1. This Certificate of Public Convenience and Necessity shall be issued to and held by Mobil Oil Canada, Ltd. (the "Company") pending the establishment of the legal operating entity for the Sable Offshore Energy Project. Upon establishment of that legal entity, the Proponents will apply for permission to transfer this Certificate so that the pipeline facilities, in respect of which this Certificate is issued, shall be held and operated by that entity.
2. The Company shall implement or cause to be implemented all of the policies, practices, and procedures for the protection of the environment included in or referred to in its Application, in its undertakings made to relevant regulatory authorities, and as adduced in evidence before the Board in the GH-6-96 proceeding.
3. The Company shall, at least 60 working days prior to the commencement of construction of the nearshore pipeline in Betty's Cove, submit to the appropriate regulatory authorities for approval additional information regarding the proposed specific routes of the subsea pipeline and the specific installation method for the landfall point. The additional information shall set out:
 - (a) the results of the sediment sampling program along the specific route into Betty's Cove;
 - (b) an underwater habitat assessment along the specific route into Betty's Cove;
 - (c) an environmental issues list identifying all relevant effects of the selected route on marine biological Valued Environmental Components;
 - (d) the associated mitigation measures to render those environmental effects insignificant; and
 - (e) the details on the selected installation method for the landfall point.
4. The Company shall conduct a minimum of one full year of baseline water and sediment quality monitoring prior to any trenching activity in Country Harbour. Furthermore, the results of this program and those of the sediment modelling study for Country Harbour shall be submitted to the Board and shall be made available for review by both the Fisheries Liaison Committee and the Department of Fisheries and Oceans. Any issues raised shall be addressed prior to the commencement of any trenching activity.
5. The Company shall, to the extent possible, conduct pipeline laying activity at Country Harbour and Country Island outside the mid-May to mid-August nesting season, particularly until the appropriate baseline data has been collected and analyzed on the roseate tern population in this area. This data shall be submitted to the Board.

6. The Company shall prepare detailed Contingency Plans (as part of the Environmental Protection Plan) which focus on spill prevention and response, and strategies for cleaning up the marine and terrestrial environments. These plans shall be submitted to the Board prior to the commencement of any fabrication or construction activity related to the offshore pipeline.
7. The Company shall empower their Environmental Inspector with the authority to terminate any onshore pipeline construction activities which impact negatively on fish and fish habitat.
8. The Company shall revisit its use of the upper limit of the Nova Scotia Noise Guidelines as the design criteria for the Goldboro gas plant. The Company shall carry out regular noise monitoring at the natural gas plant and add plant noise to its Environmental Issues List.
9. The Company shall submit to the Board a written protocol or agreement spelling out Proponent-Aboriginal roles and responsibilities for cooperation in studies and monitoring.

Offshore Pipeline

Prior to the Commencement of Construction

10. The Company shall submit to the Board, for review, at least one hundred and eighty (180) days prior to the commencement of installation:
 - (a) the pipeline design data and the final pipeline design, including, but not limited to:
 - (i) the final Offshore Pipeline Design Basis Memorandum;
 - (ii) detailed materials specifications;
 - (iii) any relevant supporting design studies;
 - (iv) limits of unacceptable spans found during installation, testing and operation, and mitigation measures to be used if an unacceptable span was to develop; and
 - (v) construction schematics.
 - (b) a list of the regulations, standards, codes and specifications used in the design, construction and operation of the pipeline from the Thebaud Platform to the Goldboro gas plant, indicating the date of issue;
 - (c) reports providing results and supporting data from any geotechnical field investigations for the evaluation of:
 - (i) the potential for slope instability;
 - (ii) the geotechnical and geological hazards and geothermal regimes which may be encountered during installation and operation of the facilities; and
 - (iii) the special designs and measures required to safeguard the pipeline; and
 - (d) the pipeline route detailed on appropriate scale maps, indicating all seabed, geotechnical and other features to a sufficient depth and resolution.

11. The Company shall not start any pipeline installation activity until the final pipeline design has been submitted to the Board for review.
12. Unless the Board otherwise directs, the Company shall submit, at least thirty (30) days prior to the commencement of construction, a detailed construction schedule. The Proponents shall provide the Board and all other appropriate regulatory authorities with regular updates on the progress of construction activities and with any changes in the schedule as the construction progresses.
13. The Company shall submit to the Board, for review, at least thirty (30) days prior to the commencement of construction, all construction manuals, including:
 - (a) a pipe laying and pipe trenching manual (including, but not limited to, other pipeline construction activities such as pipeline stabilization or anchoring);
 - (b) a construction safety manual (containing appropriate procedures for the reporting of any incidents to the Board);
 - (c) a pipeline emergency response procedures manual; and
 - (d) all other manuals relevant to construction, installation and operation of the subsea gathering line from the Thebaud Platform to the Goldboro gas plant.

During Construction

14. Unless the Board otherwise directs, the Company shall, during construction, for audit purposes, maintain at each construction site a copy of the welding procedures and non-destructive testing procedures used on the project together with all supporting documentation.

Post Construction

15. The Company shall file with the Board, no later than one hundred and eighty (180) days after the completion of the pipe laying, an as-laid pipeline survey report and maps.
16. The Company shall submit to the Board, for review, at least thirty (30) days prior to "Leave to Open", an operation and maintenance manual including, but not limited to, inspection and remedial correction procedures for seabed movements causing spanning.
17. If the Board determines that the pipeline design assumptions, relative to pipeline burial, pipeline stability and seabed changes, cannot be confirmed, the Company shall submit to the Board, for review, at least one hundred and eighty (180) days prior to leave to open, a pipeline in-place monitoring program. This program shall include all the inspection procedures and schedules, and criteria that will initiate specific inspection and remedial action procedures (such as storm conditions and limiting span lengths). This program will also identify all equipment required on-site or near-site for remedial action procedures, as well as any such equipment that has to be brought from remote locations. The program shall include the procedures for reporting incidents to the Board.

Goldboro Gas Plant

18. Unless the Board otherwise directs, the Company shall:
- (a) cause the gas plant facilities to be designed, manufactured, located, constructed and installed in accordance with those specifications, drawings, and other information set forth in its application, or as otherwise adduced in evidence before the Board;
 - (b) within thirty (30) days of the issuance of this Certificate, submit to the Board for review an abbreviated design information package of the gas plant containing:
 - (i) process flows, with temperatures, pressures, mass balances, capacity and energy requirements of compressors, heaters, and turbo-expanders; and
 - (ii) codes, standards and material specifications, to be used (for major equipment and piping);
 - (c) make no variation to the specifications, drawings or other information or data referred to in subparagraphs 18(a) and 18(b) without the prior approval of the Board; and
 - (d) design, fabricate and install all of the components of the gas plant in accordance with the codes and standards of the Province of Nova Scotia which are adopted by reference in this Certificate.

Quality Assurance and Construction

19. Unless the Board otherwise directs, the Company shall file with the Board for its approval, at least ninety (90) days prior to the proposed date for the commencement of construction of the gas plant authorized by this Certificate:
- (a) a design information package of the gas plant containing:
 - (i) process flows, with temperatures, pressures, mass balances, and equipment energy requirements;
 - (ii) piping and instrumentation diagrams for all plant systems;
 - (iii) material specifications to be used.
 - (b) a description of any changes in the gas plant design from that indicated at the hearing or in the abbreviated design information package submitted pursuant to subparagraph 18(b);
 - (c) a list of the names and sections of the codes and standards to which the gas plant will be designed, fabricated and constructed;

- (d) the procedures for project quality assurance, quality control and cost control in the design, fabrication and construction of the gas plant, including audit and corrective action procedures; and
- (e) the pressure piping and pressure vessel, non-destructive and pressure testing program including audit and corrective action procedures.

Construction and Operational Safety

20. Unless the Board otherwise directs, the Company shall:

- (a) review with the appropriate regulators the results of all their Process Hazard Assessments within thirty (30) days of their completion. The Goldboro gas plant's Process Hazard Analysis shall be completed and reviewed with the appropriate regulators at least thirty (30) working days before final design freeze; and
- (b) At least sixty (60) days prior to the commencement of construction of the approved facilities, file with the Board for review:
 - (i) a detailed construction schedule or schedules identifying major construction activities and shall notify the Board of any modifications to the schedule or schedules as they occur; and
 - (ii) a construction schedule safety addendum, detailing the management of safety for all employees on site, for each phase of the construction.

During Construction

- 21. Unless the Board otherwise directs, the Company shall, during construction of the gas plant, file with the Board monthly construction progress and cost reports, in a format to be determined through consultation with Board staff, providing a breakdown, by plant process system, location and facility, of costs incurred during that month, the percentage of each activity which has been completed and an update of costs to complete the project.
- 22. Unless the Board otherwise directs, the Company shall, during construction of the gas plant, maintain for audit purposes at each construction site, a copy of the welding procedures and non-destructive testing procedures used on the project together with all supporting documentation.

Prior to Leave to Open

- 23. Unless the Board otherwise directs, the Company shall, prior to applying for leave to open for any segment of the gas processing facilities authorized by this Certificate, file with the Board for its approval:
 - (a) its specifications and procedures for the operation, maintenance, repair, and abandonment of the Goldboro gas plant as established pursuant to section 48 of the *Onshore Pipeline Regulations*. The existence of, and the detail of any

operation, maintenance or repair procedure shall be defensible in relation to the system or equipment Process Hazard Analysis;

- (b) a detailed explanation of the programs for monitoring the internal and external conditions of the pressure retaining equipment in the gas plant authorized by this Certificate, having particular regard to those parts of the gas plant with the potential to cause danger to the employees, the public and the environment; and
- (c) a detailed training program, based at least in part on the gas plant's Process Hazard Analysis, wherein audits can verify competency of the employee before the assignment of the task.

Prior to Commissioning and Start-Up

24. Unless the Board otherwise directs, the Company shall conduct a "Pre-Commissioning Safety Audit" of all gas plant facilities, and shall submit the results of the audit to the Board for review prior to undertaking the commissioning of the gas plant.

Prior to Equipment Custody Turn-Over or Commissioning

25. Unless the Board otherwise directs, the Company shall, at least sixty (60) days prior to turn-over or commissioning of any gas plant equipment, submit for review:
- (a) the turn-over, commissioning, and start-up procedures and schedules for all plant equipment. Include information regarding the estimated number and location of persons on site during each of the commissioning and start-up procedures; and
 - (b) the turn-over, or commissioning safety management policies and procedures, showing how the safety of all the employees and the public will be ensured during the commissioning phases of the gas plant.
26. Unless the Board otherwise directs, the Company shall submit for approval at least sixty (60) days prior to commencing plant operations:
- (a) an operations and maintenance manual pursuant to section 48 of Part VII of the *Onshore Pipeline Regulations* which shall include all the safe work procedures required to maintain, commission, start-up, operate, and shutdown all equipment in, and associated with, the gas plant;
 - (b) a gas plant specific emergency response procedures manual; and
 - (c) contingency plans for hydrocarbon releases to atmosphere within the gas plant and related facilities.

Post Construction

27. Unless the Board otherwise directs, the Company shall, within one-hundred and eighty (180) days of putting the additional gas plant facilities into service, file with the Board a report providing a breakdown of the costs incurred in the construction of the gas processing facilities, in a format similar to that used in Schedules 4 through 15 of subtab 9 under Tab "Facilities" of Exhibit B-1 of the GH-3-96 proceeding, setting forth actual versus estimated costs, including reasons for significant differences from estimates.

Gas Plant Operation

28. Unless the Board otherwise directs, the operators of the Goldboro gas plant shall ensure that the plant is operated in accordance with environmental protection codes, and standards approved or adopted by the Province of Nova Scotia which are adopted by reference in this document.
29. Unless the Board otherwise directs, the operators of the Goldboro gas plant will at least once per quarter allow, after at least 24 hours prior notice, representatives of the provincial environmental protection branch onto the gas plant site to inspect, audit or verify the installation or calibration of those metering, measuring and sample collection devices required to compile environmental compliance data that will be used by the Company to show compliance with applicable regulations.
30. Unless the Board otherwise directs, the operators of the Goldboro gas plant shall ensure that all modifications, repairs and expansions conform to the applicable codes or standards that are approved or adopted by the Province of Nova Scotia from time to time, which are adopted by reference in this document.

General Condition

31. Unless the Board otherwise directs prior to 31 December 2000, this Certificate shall expire on 31 December 2000, unless the construction and installation of the offshore pipeline facilities has commenced by that date.

Appendix II

Maritimes & Northeast Pipeline Project Certificate Conditions

1. Unless the Board otherwise directs, the pipeline facilities in respect of which this Certificate is issued shall be the property of and shall be operated by Maritimes & Northeast Pipeline Management Ltd. (the "Company") on behalf of Maritimes & Northeast Pipeline Limited Partnership.
2. The Company shall implement or cause to be implemented all of the policies, practices, and procedures for the protection of the environment included in or referred to in its Application, in its undertakings made to relevant regulatory authorities, and as adduced in evidence before the Board in the GH-6-96 proceeding.
3. Unless the Board otherwise directs, the Company shall:
 - (a) cause the approved facilities to be designed, manufactured, located, constructed and installed in accordance with those specifications, drawings and other information or data set forth in its application, or as otherwise adduced in evidence before the Board, except as varied in accordance with subsection (b) hereof; and
 - (b) cause no variation to be made to the specifications, drawings or other information or data referred to in subsection (a) without the prior approval of the Board.
4. Unless the Board otherwise directs, at least ninety (90) days prior to applying for leave to open for any segment of the pipeline facilities authorized by this Certificate, the Company shall file with the Board, for its approval, operations and maintenance manuals and emergency response plans in accordance with sections 48 and 49 of the *Onshore Pipeline Regulations*.

Prior to the Commencement of Construction

5. Unless the Board otherwise directs, at least ten (10) days prior to the commencement of construction of the approved facilities, the Company shall file with the Board a detailed construction schedule or schedules identifying major construction activities and shall notify the Board of any modifications to the schedule or schedules as they occur.
6. Unless the Board otherwise directs, at least ninety (90) days prior to the commencement of construction, the Company shall submit reports satisfactory to the Board providing results and supporting data from any geotechnical and hydrological field investigations for the evaluation of:
 - (a) the potential for slope instability;
 - (b) water crossings and the approaches thereto;

- (c) the presence of acid generating rock; and
 - (d) the presence of, or the potential for, the formation of, sink holes.
7. Unless the Board otherwise directs, at least ninety (90) days prior to the commencement of construction of the pipeline authorized by this Certificate, the Company shall file with the Board for approval:
- (a) the final design for the pipeline, including a description of any changes in the pipeline design from that submitted at the hearing set down by Order GH-6-96; and
 - (b) the procedures for project cost control in the construction of the pipeline authorized by this Certificate.
8. The Company shall, at least sixty (60) days prior to construction, submit to the Board construction plans for each watercourse crossing site. The construction plans shall:
- (a) be prepared in consultation with the appropriate regulatory agencies;
 - (b) include a consideration of all salmon rivers which will be crossed by the pipeline;
 - (c) as a minimum, include consideration of erosion and sedimentation control, blasting requirements, habitat restoration and site restoration as required, but may refer to standard drawings or specifications as appropriate; and
 - (d) be provided to interested parties for comment.
9. The Company shall, at least sixty (60) days prior to construction, prepare a report on the scheduling of water crossings in cooperation with appropriate regulatory authorities. The report shall discuss back-up measures to resolve potential problems. The report shall be made available to all interested parties who request a copy. Furthermore, the Company shall, at least 30 working days prior to the commencement of construction of the pipeline, submit to the Board for approval, additional information regarding the stream crossings. The additional information shall set out:
- (a) the construction designs of the crossings;
 - (b) the proposed duration of the crossings;
 - (c) in-stream timing restrictions identified by regulatory agencies;
 - (d) an erosion and sediment control plan;
 - (e) the site-specific mitigative and restorative measures to be employed as a result of consultations with regulatory agencies;

- (f) if a directional drilling method is used, the detailed drilling fluid plan addressing the methods of drilling fluid containment and storage, and specific methods for disposing of and/or recycling of the drilling fluids;
 - (g) if blasting is required, the blasting plan, including comments from the Department of Fisheries and Oceans;
 - (h) the evidence to demonstrate that all issues raised by regulatory agencies have been adequately addressed, including all necessary updates to the environmental assessments where deficiencies have been identified;
 - (i) the evidence to demonstrate that the proposed construction method and site-specific mitigative and restorative measures are in compliance with federal and provincial legislation; and
 - (j) the status of approvals, including environmental conditions.
10. The Company shall, at least thirty (30) days prior to the commencement of construction, file with the Board the results of the acid generating rock studies, including any locations which would be affected by construction, the proposed mitigation measures, monitoring requirements and the results of consultation with provincial authorities.
11. The Company shall, at least thirty (30) working days prior to the commencement of construction of the pipeline, submit to the Board for approval additional information regarding the treatment method to deal with acid drainage and specific mitigative measures to be implemented at stream crossings. The additional information shall set out for each stream crossing to be affected:
- (a) the name and location of the stream;
 - (b) the selected treatment method of the runoff water;
 - (c) the proposed Canadian Water Quality Guideline values to be adhered to;
 - (d) the site-specific mitigative and restorative measures to be employed as a result of consultation with regulatory agencies;
 - (e) the evidence to demonstrate that all issues raised by regulatory agencies and other interested parties have been adequately addressed, including all necessary updates to the environmental assessments where deficiencies have been identified; and
 - (f) the status of approvals, including environmental conditions.
12. The Company shall, at least one hundred and eighty (180) days prior to the commencement of any construction activity requiring regulatory approval, submit to the Board for approval the final Environmental Protection Plan. Details of the proposed specific route for the pipeline shall also be filed at that time, and shall include:

- (a) the results of all pre-construction surveys to identify special status species/habitat along the proposed corridor, including specific measures to be implemented;
- (b) an environmental issues list identifying all relevant effects of the selected route; and
- (c) the associated mitigation measures to render those environmental effects insignificant.

During Construction

- 13. Unless the Board otherwise directs, the Company shall, during construction, maintain for audit purposes at each construction site, a copy of the welding procedures and non-destructive testing procedures used on the project together with all supporting documentation.
- 14. Unless the Board otherwise directs, during the construction period, each month the Company shall submit construction reports that are satisfactory to the Board which detail the progress and current status of the project.

Post Construction

- 15. Unless the Board otherwise directs, within one-hundred and eighty (180) days of putting the facilities into service, the Company shall file with the Board a report providing a breakdown of the costs incurred in the construction of the facilities, in a format that is satisfactory to the Board, setting forth actual versus estimated costs, including reasons for significant differences from estimates.
- 16. The Company shall file with the Board a post-construction environmental report within one hundred and eighty (180) days of the in-service date for the Project. The post-construction environmental report shall set out the environmental issues that have arisen and shall:
 - (a) indicate the issues resolved as well as unresolved; and
 - (b) describe the measures the Company proposes to take in respect of the unresolved issues.
- 17. The Company shall develop the Environmental Protection Plan in consultation with government agencies, stakeholder groups, interested parties and landowners.
- 18. The Company shall implement an environmental compliance and monitoring program which would include the filing of post-construction environmental reports to address Project-related environmental issues.
- 19. The Company shall develop the operations, emergency response and environmental protection manuals in consultation with relevant agencies, stakeholders and the public. The manuals shall be filed with the Board.

20. The Company shall take all reasonable steps to avoid fragmenting natural and forested areas. The fragmentation of natural and forested areas shall be included in the Company's Issues List. This shall require consideration and follow-up on steps to be taken at the detailed route design and construction stages.
21. The Company shall, at least one hundred and eighty (180) days prior to construction, submit a traffic study for the Goldboro area to the Board.
22. The Company shall submit to the Board a written protocol or agreement spelling out Proponent-Aboriginal roles and responsibilities for cooperation in studies and monitoring.
23. The Company shall file with the Board, prior to the commencement of construction, the executed Backstop Precedent Agreements.
24. The Company shall file with the Board, prior to the commencement of service, all firm transportation Service Agreements.
25. Unless the Board otherwise directs, this Certificate shall expire on 31 December 2000 unless the construction and installation of the facilities authorized by this Certificate has commenced by that date.

